

REMARKS:

Claims 1-12 and 14-18 are in the case and presented for consideration.

Claim 1 has been improved to provide better define the claimed invention. Support for the changes to claim 1 can be found, for example, in FIGS. 1 and 5 and the corresponding descriptions of FIGS. 1 and 5 in paragraphs [0038], [0046], [0049] and [0056] of the specification.

Claims 2, 3, 5, 7, 12 and 14 have been amended to make minor editorial changes.

Support for new claims 15-17 can be found, for example, in the last sentence of paragraph [0063] and in paragraph [0064] of the specification, and in FIGS. 7-8.

New claim 18 corresponds to originally filed claim 9. Accordingly, no new matter has been added.

Claim Rejections

Claims 1-8, 11-12 and 14 are rejected as being anticipated by U.S. Patent 4,476,196 to Poeppel, et al. (hereinafter referred to as "Poeppel"). In section 2 (from middle of page 2 to top of page 4) of the September 1, 2006 Office Action, the Examiner asserts that Poeppel discloses the claimed solid oxide fuel cell.

Applicant respectfully traverses the above-noted rejection. For the reasons set forth below, Applicant respectfully submits that Poeppel neither teaches nor suggests Applicant's invention as it is defined in the claims.

Applicant also welcomes the opportunity to clarify the novel features of the claimed invention for the Examiner. The claimed invention will be discussed with reference to specific embodiments, this is done for purposes of illustration only and should not

construed to limit the spirit or the scope of the claimed invention.

The claimed invention is related to a flat type solid oxide fuel cell assembly (10). See, e.g., abstract and FIGS. 5-9. Each fuel cell includes a fuel gas electrode layer (2) and an air electrode layer (6), which are made of a suitable porous material. See, e.g., specification, paragraphs [0037], [0038], and [0068]. In one embodiment, the electrolyte film (3, 7, 8a, 8b) is disposed on the front or back surface as well as on all of the side surfaces of one of the electrode layers (such as the fuel gas electrode) when the single fuel cell is formed. See, e.g., paragraph [0046] of the specification. This way, the fuel gas inlet and outlet (18) of the single fuel cell do not have to be established at the time of manufacture or fabrication. The entire fuel gas electrode layer by itself forms a fuel flow path through the single fuel cell, and the fuel gas inlet and outlet may be established by removing a portion of the electrolyte film from the opposing side surfaces of the fuel gas electrode layer. See, e.g., paragraph [0046] of the specification. Similarly, the entire air electrode layer by itself forms an air flow path, which may be defined by the orientation of the air inlet and outlet openings of the manifold plates (11) after the single fuel cell have been arranged into a stack. See, e.g., paragraph [0060]. See also, e.g., FIGS. 5 and 6, which are reproduced below for the Examiner's ease of reference.

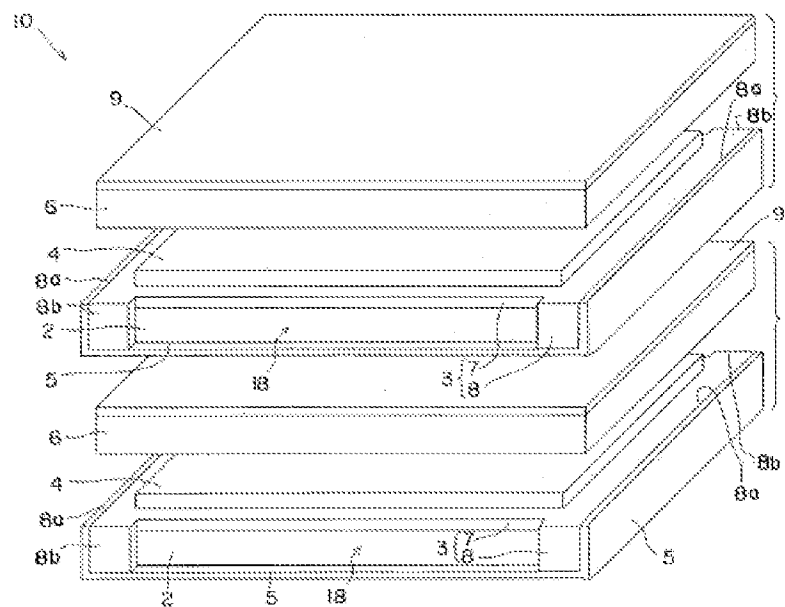


FIG. 5

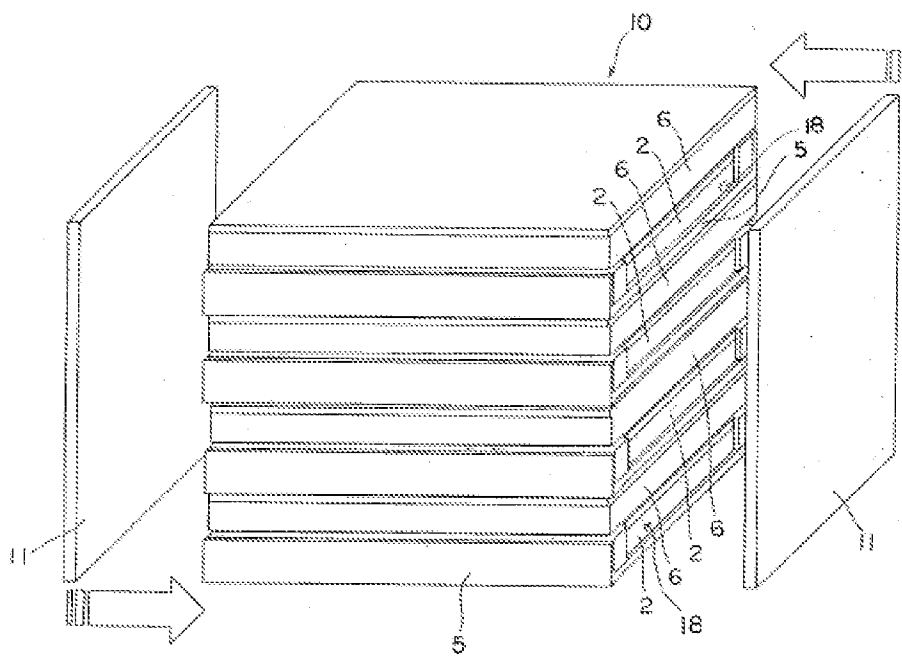


FIG. 6

In sharp contrast, the planar electrodes in Poeppel are provided with substantially parallel core passageways, each having a ***predefined cross-sectional profile***. See Poeppel, col. 7, lines 52-56. The passageways also extend linearly between two opposing sides of the electrodes. See Poeppel, FIGS. 2-3. Since the fuel and the oxidant only travel end-to-end through these dedicated fluid passageways, Poeppel cannot be regarded as teaching an electrode layer whose ***entire cross-section*** forms a fuel gas or air flow path.

In addition, Poeppel is missing the claimed feature “a seal portion ***covering all side surfaces*** of said first electrode...”, as called for in claims 1 (line 12), 12 (line 18), and 14 (line 10). According to Poeppel, the anode and cathode passageways are extruded in pliant or green form. See Poeppel, col. 8, lines 14-16. Once heat cured, the sides of the electrode through which the fuel gas or air are permitted to flow are permanently established. In contrast, all the side surfaces of one electrode layer of the claimed single fuel cell is covered with a film, thus permitting the selection of the opposing side surfaces through which the fuel gas or air should flow even after the single fuel cells have been fabricated or assembled into a stack. In addition, the sides of the other electrode layer of the claimed single fuel cell is free of any film, thus the flow path can be selectively defined by the location of the openings on the manifold plate. Accordingly, the claimed fuel cell is not only ***structurally distinguished*** from Poeppel, but it is also easier to assemble and more adaptable to a wider range of applications than the fuel cell described in Poeppel (whose flow trajectory is predefined prior to fabrication).

This and other advantages offered by the present invention are not disclosed or

suggested by Poeppel or any of the cited references.

With regards to claims 2-9 and 10-11, these claims depend from claim 1, and therefore should be patentable at least for the reasons given for claim 1 above.

Accordingly all of the claims are believed to be distinguished over the prior art and, by this amendment, the application and claims are believed to be in condition for allowance.

If any issues remain, the Examiner is respectfully invited and urged to contact the undersigned at the telephone number below.

Respectfully submitted,

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